**DSA BOOTCAMP ASSIGNMENT**

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Q1. Write a program to Swap to two numbers.

Ans-

#include<iostream>

using namespace std;

int main()

{

int a=10,b=20,temp;

cout<<"value before swapping are"<<"a="<<a<<"b="<<b;

temp=a;

a=b;

b=temp;

cout<<"value after swapping"<<"a="<<a<<"b"<<b;

return 0;

}

Q2. Write a program to find the largest number among three numbers entered by the user.

Ans-

#include <iostream>

using namespace std;

int main() {

float n1, n2, n3;

cout<< "Enter three numbers:";

cin>>n1>>n2>>n3;

if(n1>= n2 && n1>= n3)

cout<< "Largest number:"<<n1;

if(n2 >= n1 && n2 >= n3)

cout<< "Largest number:"<<n2;

if(n3 >= n1 && n3 >= n2)

cout << "Largest number:"<<n3;

return 0;

}

Q3. Write a program to check whether a year entered by a user is Leap year or not.

Ans-

#include <iostream>

using namespace std;

int main()

{

int year;

cout<<"Enter the year in yyyy";

cin >> year;

if (year % 4 == 0)

cout << year << " is a leap year";

else

cout << year << " is not a leap year";

return 0;

}

Q4. Write a program to display Fibonacci Series upto nth term. (Using loops)

Ans-

#include <iostream>

using namespace std;

int main() {

int n, t1 = 0, t2 = 1, nextTerm = 0;

cout<< "Enter the number of terms: ";

cin >>n;

cout <<"Fibonacci Series:";

for (int i = 1; i <= n; ++i) {

if(i == 1) {

cout<< t1 << ", ";

continue;

}

if(i == 2) {

cout<< t2 << ", ";

continue;

}

nextTerm = t1 + t2;

t1 = t2;

t2 = nextTerm;

cout<< nextTerm << ", ";

}

return 0;

}

Q5. Write a program to check whether a number is Prime or Not.

Ans-

#include <iostream>

using namespace std;

int main() {

int i, n;

bool isPrime = true;

cout<< "Enter a positive integer: ";

cin >> n;

// 0 and 1 are not prime numbers

if (n == 0 || n == 1) {

isPrime = false;

}

else {

for (i = 2; i <= n / 2; ++i) {

if (n % i == 0) {

isPrime = false;

break;

}

}

}

if (isPrime)

cout << n << " is a prime number";

else

cout << n << " is not a prime number";

return 0;

}

Q6. Print this pattern using loops

For n=5

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\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

Ans-

#include<iostream>

using namespace std;

int main()

{

int n=5, s, i, j;

for(i = 1; i <= n; i++)

{

for(s = i; s < n; s++)

{

cout << " ";

}

for(j = 1; j <= (2 \* i - 1); j++)

{

cout << "\*";

}

cout << "\n";

}

}

Q7.Write a program that takes n elements from the user and displays the second largest element of an array.

Ans-

#include <iostream>

using namespace std;

int main(){

int n, num[50], largest, second;

cout<<"Enter number of elements: ";

cin>>n;

for(int i=0; i<n; i++){

cout<<"Enter Array Element"<<(i+1)<<": ";

cin>>num[i];

}

if(num[0]<num[1]){

largest = num[1];

second = num[0];

}

else{

largest = num[0];

second = num[1];

}

for (int i = 2; i< n ; i ++) {

if (num[i] > largest) {

second = largest;

largest = num[i];

}

else if (num[i] > second && num[i] != largest) {

second = num[i];

}

}

cout<<"Second Largest Element in array is: "<<second;

return 0;

}

Q8. [https://www.hackerrank.com/callenges/array-left-rotation/problem](https://www.hackerrank.com/challenges/array-left-rotation/problem)

Ans-

int rotateLeft() {

int N, d, i;

cin >> N >> d;

int start = N - d;

int \*arr = new int[N];

for (i=0; i<N; ++i) {

if (start == N) start = 0;

cin >> arr[start++];

}

for (i=0; i<N; ++i) cout << arr[i] << " ";

return 0;

}

Q9. <https://www.hackerrank.com/challenges/grading/problem>

Ans-

int gradingStudents() {

int n, x;

cin>>n;

for(int i=0; i<n; i++){

cin>>x;

if(x>=38 and x%5>=3){

while(x%5!=0){

x++;

}

}

cout<<x<<endl;

}

}

Q10. <https://www.hackerrank.com/challenges/camelcase/problem>

Ans-

int camelcase(){

string s;

cin >> s;

int t=1;

for (int i=0;i<s.length();i++)

if (isupper(s[i]))

t++;

cout<<t<<endl;

return 0;

}